

Patent Claims

1. Process for production of drop forge parts, in particular drop forged moving parts of a motor such as connecting rods, crankshafts, camshafts and/or valves, made of a material containing 80 wt. % or more Ti and/or Zr and/or Hf, wherein the drop forge part during deforming is heated 5-15 K above the white α / β phase boundary and subsequently cooled.
2. Process according to Claim 1, thereby characterized, that the material is heated for 20-60 minutes.
3. Process according to Claim 1 or 2, thereby characterized, that the relaxation thermal treatment occurs at 600-700°C after cooling.
4. Process according to Claim 1, 2 or 3, thereby characterized, that the E-modulus and the rigidity of the Ti and/or Zr and/or Hf containing materials, or alloys thereof, are increased.
5. Process according to Claims 1 through 4, thereby characterized, that a titanium alloy contains 1-20 wt. % or 5-15 wt. % Zr and/or Hf and optionally incidental amounts of other light or heavy metals.
6. Process according to Claim 1, 2 or 3, thereby characterized, that a titanium alloy contains 90 wt. % titanium or is selected from Ti Al 6 V 4 or Ti Al 6 Fe2 Si.
7. Process according to Claims 1 through 6, thereby characterized, that an α / β micro structure or composite material is formed.
8. Process according to Claims 1 through 7, thereby characterized, that the drop forge part after forging is slowly cooled in air.
9. Drop forge part, in particular connecting rod, crankshaft, camshaft and/or valve part, obtained by a process according to Claims 1 through 8.
10. Drop forge part, in particular connecting rod, crankshaft, camshaft and/or valve part, comprised of a material containing 80 wt. % or more Ti and/or Zr and/or Hf, or an alloy

thereof, which during deformation of the material is heated to 5-15 K above the α / β phase boundary and subsequently was cooled in such a manner that the E-modulus is increased.